

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference WO1861EGT	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/JP2004/009507	International filing date (day/month/year) 29.06.2004	Priority date (day/month/year) 02.07.2003
International Patent Classification (IPC) or national classification and IPC B22D17/00 , 1/00, 2/00, 17/32		
Applicant HONDA MOTOR CO., LTD.		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 7 sheets, including this cover sheet.

3. This report is also accompanied by ANNEXES, comprising:

a. ☒ (sent to the applicant and to the International Bureau) a total of 9 sheets, as follows:

☒ sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).

☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.

b. ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

<input checked="" type="checkbox"/>	Box No. I	Basis of the report
<input type="checkbox"/>	Box No. II	Priority
<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
<input type="checkbox"/>	Box No. IV	Lack of unity of invention
<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
<input type="checkbox"/>	Box No. VI	Certain documents cited
<input type="checkbox"/>	Box No. VII	Certain defects in the international application
<input type="checkbox"/>	Box No. VIII	Certain observations on the international application

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/IP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

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Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following _____ which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1-34 _____ as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☒ the claims:
- nos. _____ as originally filed/furnished
- nos.* _____ as amended (together with any statement) under Article 19
- nos.* 11-27 _____ received by this Authority on 02.02.2005
- nos.* _____ received by this Authority on _____
- ☒ the drawings:
- sheets fig. 2-37 _____ as originally filed/furnished
- sheets* fig. 1 _____ received by this Authority on 02.02.2005
- sheets* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☒ The amendments have resulted in the cancellation of:
- ☐ the description, pages _____
- ☒ the claims, nos. 1-10 _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	11-27	YES
	Claims		NO
Inventive step (IS)	Claims	14, 20, 25, 27	YES
	Claims	11-13, 15-19, 21-24, 26	NO
Industrial applicability (IA)	Claims	11-27	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

Documents cited in the international search report:

Document 1: JP 04-124233 A (Rheo-Technology Ltd.), 24 April 1992, claims, page 2, upper left column, line 17 to page 3, upper left column, line 5, fig. 1

Document 2: JP 10-211565 A (Ube Industries, Ltd.), 11 August 1998, claims 12-14, paragraph [0051], fig. 2

Document 3: JP 63-256257 A (Ube Industries, Ltd.), 24 October 1988, page 4, lower left column, line 13 to lower right column, line 8, fig. 3

Document newly cited after the international search report:

Document 4: JP 11-197815 A (Honda Motor Co., Ltd.), 27 July 1999, paragraphs [0015]-[0024], [0029], drawings

The inventions set forth in claims 11 and 17 do not involve an inventive step in the light of document 1 cited in the international search report and document 4 newly cited after the international search report.

Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

Document 4 discloses a technical feature wherein slurry-like semi-solidified metal is formed by stirring and cooling a molten metal using stirring means having chillers, and the stirring means is subjected to a restoration treatment after formation of the semi-solidified metal.

Further, document 1 discloses a technical feature of semi-solidified metal formation wherein the solid phase ratio is managed by measuring the viscosity of the semi-solidified metal.

Thus, a person skilled in the art could easily recognize the obvious problem of managing the solid phase ratio in the invention disclosed in document 4, and taking the technical feature disclosed in document 1 into consideration, could easily conceive of providing on the stirring means a measurement element for measuring the viscosity of the semi-solidified metal.

The inventions set forth in claims 12 and 18 do not involve an inventive step in the light of documents 1 and 4 and document 2 cited in the international search report.

Document 2 discloses a manufacturing line for a metal molded product, said manufacturing line having a container which can hold molten metal, a molding machine for molding a semi-solidified metal raw material into a metal molded product, a conveyance device for inserting the semi-solidified metal in the container into the molding machine, and a restoration device for subjecting the empty container to a restoration treatment.

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Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

The invention set forth in claim 13 does not involve an inventive step in the light of documents 1, 2, and 4.

The invention disclosed in document 1 measures the viscosity of semi-solidified metal by measuring the force received from the semi-solidified metal, and a person skilled in the art could easily conceive of using a cantilever-shaped measurement element inserted into the semi-solidified metal as the measurement element for measuring the force received from the semi-solidified metal.

The invention set forth in claims 15 and 16 does not involve an inventive step in the light of documents 1, 2, and 4.

Document 2 discloses a container restoration treatment comprising an air-blowing step, a brushing step, and a step wherein a mold release agent is applied.

The invention set forth in claim 19 does not involve an inventive step in the light of documents 1, 2, and 4.

Document 1 discloses a feature wherein a drawing such as fig. 1 mapping the correlation between solid phase ratio and viscosity is prepared, and a feature wherein the target viscosity corresponding to a target solid phase ratio is determined using the drawing.

The invention set forth in claim 21 does not involve an inventive step in the light of documents 1, 2, and 4.

Carrying out temperature control such as cooling according to the temperature of a molten metal poured into a container on a manufacturing line for a metal

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molded product is conventional practice for a person skilled in the art.

The invention set forth in claims 22 and 23 does not involve an inventive step in the light of documents 1, 2, and 4 and document 3 cited in the international search report.

Document 3 discloses a technical feature wherein breakdown of a collapsible sand core is prevented by lowering the speed of a plunger when molten metal reaches a gate part until the molten metal reaches the collapsible sand core, and a person skilled in the art could easily conceive of adapting die-cast molding of a semi-solidified metal so that the speed of an injection piston is slowed before the leading portion of the semi-solidified metal is injected into a cavity.

The invention set forth in claim 24 does not involve an inventive step in the light of documents 1 to 4.

A cylinder block wherein a water jacket is formed using a collapsible sand core is a standard item in die-cast molding.

The invention set forth in claim 26 does not involve an inventive step in the light of documents 1, 2, and 4.

Document 2 discloses a manufacturing line for a metal molded product, said manufacturing line having a container which can hold molten metal, a molding machine for molding a semi-solidified metal raw material into a metal molded product, a conveyance device for inserting the semi-solidified metal in the container into the molding machine, and a restoration device for subjecting

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the empty container to a restoration treatment, and moreover, carrying out temperature control such as cooling according to the temperature of a molten metal poured into a container on a manufacturing line for a metal molded product is conventional practice for a person skilled in the art.

The inventions set forth in claims 14, 20, 25, and 27 are not disclosed in any of the cited documents, nor would said inventions be obvious to a person skilled in the art.